



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

SOUTHWEST REGIONAL OFFICE

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COMMONWEALTH OF VIRGINIA Department of Environmental Quality Southwest Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Masco Cabinetry LLC - Atkins Plant 12
6373 Lee Highway, Atkins, Virginia 24311
Permit No. SWRO10830

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Masco Cabinetry LLC has applied for a Title V Operating Permit renewal for its Atkins, Plant 12 facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

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Date: 06/17/2011

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Date: 6/17/11

Deputy Regional Director: Dallas R. Sizemore

Dallas R. Sizemore

Date: 6/17/11

FACILITY INFORMATION

Permittee

Masco Cabinetry LLC
6373 Lee Highway
Atkins, Virginia 24311

Facility

Masco Cabinetry LLC - Atkins Plant 12
6373 Lee Highway
Atkins, Virginia 24311

County-Plant Identification Number: 51- 173-00071

SOURCE DESCRIPTION

NAICS Code: 337110 – Wood Kitchen Cabinet and Countertop Manufacturing

The operations at the facility consist of lumber drying, processing and handling, two boilers, and a wood surface coating line. Green lumber is received at the plant from local sources or another plant. Much of the lumber is graded and dried at the facility; however, the facility may receive a significant quantity of pre-dried lumber. Air drying, two pre-dryers, and five kilns are used to lower the moisture content of the green lumber to 6-8%. The kilns and pre-dryers operate using steam generated from one 27.8 MMBtu/hr Industrial Boiler Company wood/oil-fired boiler (equipped with a multicyclone particulate collector) and one 17.8 MMBtu/hr Superior Boiler Works oil/natural gas-fired boiler. Waste from green lumber processing is pneumatically transferred to a trailer via a closed-loop cyclone.

The dried wood is processed using planers, saws, sanders, tennons, and moulding machines typical of this industry. In the "rough end", defects, offal, and strip stock shavings from machining operations are conveyed to a wood hog machine where the wood is reduced in size and transferred to a storage silo via an enclosed pneumatic conveyance system. Also, wood dust collected in the seven fabric filters that serve most woodworking operations at the plant is transferred to the storage silo. The wood dust is stored in the silo until it is burned in the facility's wood-fired boiler. When the silo is full, the excess wood dust is conveyed via a closed-loop cyclone system to a truck trailer for transfer off-site. Polyvinyl acetate glues are used to assemble the cabinet doors.

In the finishing process, a series of sealers, topcoats, and stains are applied to the cabinet doors using ten spray booths equipped with electrostatic, HVLP, or air-assisted airless spray guns, and paint filters. Two topcoat spray booths (including flash and drying areas) and two sealer spray booths are controlled by a regenerative thermal oxidizer. Two wiping machines are used to apply stains to some products. The wipe machines are equipped with paint filters for controlling any particulates that may escape the process. The cabinet doors are dried in steam-

heated ovens. The coating materials are stored in 9 bulk storage tanks, as well as drums and smaller containers. Wire hooks used to hold the cabinet doors are cleaned using acetone that is recycled and reclaimed by the manufacturer. The finished product is packaged and warehoused for shipment by trucks.

The facility is a Title V major source of VOC, xylene, and total hazardous air pollutants. This source is located in an attainment area for all pollutants. Because the facility has the potential to emit 455.2 tons/yr of VOC, it is considered an existing PSD major source. The boilers are subject to NSPS Subpart Dc and the pending Boiler MACT. The facility is also subject to MACT Subpart JJ for wood furniture manufacturing operations at major sources. The facility is currently permitted under a minor NSR permit issued on October 6, 2008, as amended on January 4, 2011.

PERMIT CHANGES

Since the previous Title V permit renewal, the company has made several changes to the facility through the minor new source review and Title V permit processes. These changes include:

- A minor NSR permit was issued on February 15, 2007 to account for changing two touch-up booth HVLP spray guns to an automated electrostatic bell applicator;
- A Title V permit amendment was issued on April 28, 2008 to process a company name change;
- A minor NSR permit amendment was issued on May 19, 2008 to reduce testing on the regenerative thermal oxidizer from biennial to once every five-years;
- A Title V permit amendment was issued on July 22, 2008 to reflect the reduced testing frequency for the regenerative thermal oxidizer;
- A minor NSR permit was issued on October 6, 2008 to reflect the addition of a new sanding machine, a new spray booth, and a new baghouse;
- A minor NSR administrative amendment was issued on January 4, 2011 to account for a company name change.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
B1		Industrial Boiler Company wood, oil-fired boiler	27.8 x 10 ⁶ Btu/hr	Western Precipitation Multiclone		PM/PM10	10/06/08 as amended 01/04/11
B2		Superior Boiler Works oil & gas- fired boiler	17.8 x 10 ⁶ Btu/hr				10/06/08 as amended 01/04/11
Woodworking Equipment Subject to 9 VAC 5 Chapter 50 (New or Modified)							
W1		Woodworking Equipment	32 x 10 ⁶ Bd-ft/yr	7 Fabric filters - 4 Carter Day, 1 Donaldson Day, 1 Waltz Holst, 1 Donaldson 484RF10	BH1-7	PM/PM10	10/06/08 as amended 01/04/11
W1		Green Lumber Processing Equipment		Closed Loop Cyclone	DCT1	PM/PM10	10/06/08 as amended 01/04/11
Furniture Finishing Equipment Subject to 9 VAC 5 Chapter 50 (New or Modified)							
F1		10 Spray Booths		Dry Filters		PM/PM10	10/06/08 as amended 01/04/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
F1		2 Topcoat Spray Booths & 2 Sealer Booths		Regenerative Thermal Oxidizer		VOC	10/06/08 as amended 01/04/11
Wood Drying Equipment		Subject to 9 VAC 5 Chapter 50 (formerly Part 5) (New or Modified)					
D1		1 predryer, 2 kilns	predryer - 1.4 x 10 ⁶ Bd-ft; 2 kilns- 90,000 Bd-ft each	---	---	---	10/06/08 as amended 01/04/11
D2		1 predryer, 3 kilns	predryer - 1.4 x 10 ⁶ Bd-ft; 2 kilns- 90,000 Bd-ft each; 1 kiln - 45,000 Bd-ft	---	---	---	10/06/08 as amended 01/04/11

EMISSIONS INVENTORY

Emissions are summarized in the following tables and are based on reported annual inventories.

2009 Actual Emissions

Emission Unit	Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO ₂	PM ₁₀	NO _x
B1	0.41	14.38	0.60	3.68	11.75
B2	0.07	1.05	0.01	0.10	1.26
W1				0.435	
D1	1.14				
F1	114.35	0.35		0.03	0.42
Total	115.97	15.78	0.61	4.25	13.43

2009 Facility Hazardous Air Pollutant Emissions

Pollutant	Hazardous Air Pollutant Emission in Tons/Yr
Xylene	4.52
Toluene	0.04
Ethylbenzene	1.03
Glycol Ethers	0.79
Cumene	0.14
Methyl Isobutyl Ketone	0
Naphthalene	0.09
Hydrogen Chloride	0.52
Methanol	0.86

EMISSION UNIT APPLICABLE REQUIREMENTS - Industrial Boiler Company Boiler (B1)

Limitations

The Industrial Boiler Company unit is subject to several state BACT requirements from Conditions 3, 12, 15, 17, 19, 20, 24, 30, 33, 34, and 39 of a minor NSR permit issued on October 6, 2008 (as amended January 4, 2011). The requirements are summarized as follows:

Condition 3 requires that PM emissions be controlled by a multicyclone collector.

Condition 12 requires that testing and monitoring ports be provided when requested.

Condition 15 limits fuel throughput to 12,600 tons per year of wood and 500,000 gallons per year of distillate oil.

Condition 17 lists the approved fuels for the unit – wood and distillate oil.

Condition 19 limits the sulfur content of the distillate oil to 0.5% by weight per shipment, and requires appropriate records.

Condition 20 requires that the unit be operated in compliance with 40 CFR 60 Subpart Dc.

Condition 24 limits visible emissions to 20 percent opacity, except for one six-minute period in an hour not to exceed 27 percent opacity.

Condition 30 limits emissions to:

POLLUTANT	EMISSION LIMIT	
	lb/hr	T/yr
Particulate Matter	4.8	15.5
PM10	4.3	14.0
Sulfur Dioxide	14.4	20.0
Nitrogen Oxides	13.6	48.2
Carbon Monoxide	16.7	54.2
VOC	0.5	1.6

Condition 33 requires that boilers be operated properly and that operators be trained.

Condition 34 requires that records of fuel consumption be kept.

Condition 39 requires the company to have written operating procedures for process and air pollution control equipment, as well as records of operator training.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-60-100, Subpart DDDDD- Industrial, Commercial, and Institutional Boilers and Process Heaters – This regulation was vacated by the US Circuit Court of Appeals on July 30, 2007. A final rule was published on March 21, 2011, but the rule is currently subject to reconsideration. The company identified the requirement to submit an initial notification as an applicable requirement. However, the effective date of the rule was stayed by EPA on May 18, 2011, and the rule is now considered a future applicable requirement.

9 VAC 5-40-900, Standard for Particulate Matter
(see Streamlined Requirements discussion)

9 VAC 5-40-930, Standard for Sulfur Dioxide
(see Streamlined Requirements discussion)

Monitoring

The monitoring and recordkeeping requirements in Condition 34 of the NSR permit have been modified to meet Part 70 requirements.

The Title V permit requires proper operation of the boiler in conjunction with the operation of a multicyclone to comply with the particulate matter and the visible emission requirements for the Industrial wood-fired boiler. The multicyclone will be inspected annually for structural integrity.

The permit contains a requirement to perform weekly inspections of the boiler stack. If visible emissions are present, timely corrective action must be taken such that no visible emissions are present, or a six-minute visible emission evaluation (VEE) must be performed according to 40 CFR 60, Appendix A, Method 9. If during the six-minute period, any violations of the 20% opacity standard are noted, a 60-minute VEE is required to demonstrate compliance with the standard. This will satisfy the periodic monitoring requirement for the visible emission limitation included in the permit.

Compliance with the emission limits will be determined by computations involving acceptable emission factors as shown below:

a. Wood combustion

$$E = F \times W, \text{ where}$$

E = Emission rate (lb/time period)

F = Emission factors from stack test or AP-42, Section 1.6 (09/2003)

PM = 2.39 lb/Ton of wood waste (from stack test results)
PM10 = 2.15 lb/Ton of wood waste (from stack test results)
NO_x = 0.49 lb/MMBtu (AP-42, Table 1.6-2)
SO₂ = 0.025 lb/MMBtu (AP-42, Table 1.6-2)
CO = 0.60 lb/MMBtu (AP-42, Table 1.6-2)
VOC = 0.017 lb/MMBtu (AP-42, Table 1.6-3)
W = Wood combusted (Tons/time period), or maximum rated heat input capacity in MMBtu/hr

b. #2 oil combustion

$E = F \times O$, where

E = Emission rate (lb/time period)

F = Emission factors from AP-42, Tables 1.3-1 – 6 (09/1998) shown below

PM = 1.66 lb/1000 gal of oil (accounts for multicyclone control)

PM10 = 1.66 lb/1000 gal of oil (accounts for multicyclone control)

NO_x = 20 lb/1000 gal of oil

SO₂ = 71 lb/1000 gal of oil

CO = 5 lb/1000 gal of oil

VOC = 0.2 lb/1000 gal of oil

O = Oil combusted (1000 gal/time period)

The hourly and annual particulate matter emission limits from wood and No. 2 oil combustion were established based on the maximum rated capacity of the unit, insuring that the likelihood of exceedance is very small as long as the unit is maintained and operated properly. The particulate matter emission limit during wood combustion was developed from stack test results for the unit upon installation, and accounts for multiclone control. Compliance with these emission limits will be demonstrated by proper maintenance and operation.

Compliance Assurance Monitoring (CAM) Applicability

In the 2006 Title V permit renewal evaluation it was determined that pre-control PM10 emissions are less than 100 tons/yr. Therefore, CAM does not apply to this unit.

Recordkeeping

The minor NSR permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include annual fuel consumption, written operating procedures for the boiler and associated control device, maintenance schedule, fuel supplier certifications, and operating data that can be used to determine emissions. These requirements are incorporated in the Title V permit. The company will also keep multicyclone inspection records, operator training records, and records of emissions estimates.

Testing

The Title V permit does not require source tests for this unit. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The Title V permit requires the company to submit fuel quality reports on a semiannual basis as required by 40 CFR 60.48(c). When the Title V permit was renewed in 2006, the company obtained authorization to submit Title V, MACT, and state-required semiannual reports on March 1 (covering calendar months July – December) and September 1 (covering calendar months January – June) of each year. This was clarified in the permit.

Streamlined Requirements

9 VAC 5-50-10 D states that the standards contained in Chapter 40 apply to new sources if their provisions are more stringent than the standards in Chapter 50, Chapter 80, or any permit issued pursuant to Chapter 80. Since Chapter 40 contains emission standards for particulate matter and sulfur dioxide from boilers, we must determine which standards are more restrictive. If the standards in Chapter 40 are more restrictive than the established permitted emission limits, then they must be included in the Title V permit.

9 VAC 5-40-900, Standard for Particulate Matter

Condition 30 of the NSR permit limits hourly particulate matter emissions from this unit to 4.8 lb/hr. Since the boiler was installed prior to 1979, by definition it is a fuel burning equipment installation. According to 9 VAC 5-40-900 A.1.b, the unit may not emit more particulate matter than can be calculated by the formula:

$$E = 1.0906 H^{-0.2594} \quad \text{where } E \text{ is particulate emissions in lb/MMBtu, and} \\ H \text{ is the heat capacity of the unit (27.8 MMBtu/hr).}$$

The resulting particulate matter emission standard is,

$$E = 1.0906(27.8)^{-0.2594} \text{ lb/MMBtu} = 0.46 \text{ lb/MMBtu} \\ (0.46 \text{ lb/MMBtu})(27.8 \text{ MMBtu/hr}) = 12.8 \text{ lb/hr}$$

While the two figures are not expressed in common terms, an argument may be made that they are comparable. The lb/MMBtu expression represents an instantaneous quantity, but is practically verified by measurement over the course of a longer time frame, usually one hour. As can be seen from the above calculation, the Chapter 40 standard would allow emissions to exceed the hourly emission limits (approximately double). The Chapter 40 standard is considered less restrictive and therefore inapplicable to this unit. This standard may be streamlined by the more stringent particulate matter emission limitation.

9 VAC 5-40-930, Standard for Sulfur Dioxide

9 VAC 5-40-930 limits sulfur dioxide emissions from boilers according to the formula

$S = 2.64 K$ where, S is lb/hr of SO₂, and
K is the heat capacity of the unit (27.8 MMBtu/hr).

$$(2.64)(27.8) = 73.4 \text{ lb/hr SO}_2$$

Condition 30 of the NSR permit limits the sulfur emissions to 14.4 pounds per hour. The requirements of 9 VAC 5-40-930 are therefore less restrictive than current permit limitations, and streamlining of this requirement is appropriate.

EMISSION UNIT APPLICABLE REQUIREMENTS – Superior Boiler Company Boiler (B2)

Limitations

The Superior Boiler Company unit is subject to several state BACT requirements from Conditions 12, 14, 18, 19, 20, 23, 29, 33, 34, and 39 of a minor NSR permit issued on October 6, 2008 (as amended January 4, 2011). The requirements are summarized as follows:

Condition 12 requires that testing and monitoring ports be provided when requested.

Condition 14 limits fuel consumption to 156 million cubic feet of natural gas/yr and 75,600 gallons of distillate oil/yr.

Condition 18 lists the approved fuels for the unit - natural gas and distillate oil.

Condition 19 limits the sulfur content of the distillate oil to 0.5% sulfur by weight per shipment, and requires the company to obtain certifications from the fuel supplier.

Condition 20 requires that the unit be operated in compliance with 40 CFR 60 Subpart Dc.

Condition 23 limits opacity from the unit to 10%, except one six-minute period not to exceed 20%.

Condition 29 limits pollutant emissions to those listed below:

POLLUTANT	EMISSION LIMIT	
	lb/hr	T/yr
Particulate Matter	0.4	0.7
PM10	0.4	0.7

POLLUTANT	EMISSION LIMIT	
	lb/hr	T/yr
Sulfur Dioxide	9.3	2.8
Nitrogen Oxides	2.6	8.6
Carbon Monoxide	1.5	6.7

Condition 33 requires that boilers be operated properly and that operators be trained.

Condition 34 requires the company to keep records of fuel consumption.

Condition 39 requires the company to have written operating procedures for process and air pollution control equipment, as well as records of operator training.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-60-100, Subpart DDDDD- Industrial, Commercial, and Institutional Boilers and Process Heaters – This regulation was vacated by the US Circuit Court of Appeals on July 30, 2007. A final rule was published on March 21, 2011, but the rule is currently subject to reconsideration. The company identified the requirement to submit an initial notification as an applicable requirement. However, the effective date of the rule was stayed by EPA on May 18, 2011, and the rule is now considered a future applicable requirement.

9 VAC 5-40-900 B, Standard for Particulate Matter
(see Streamlined Requirements discussion)

9 VAC 5-50-80, Standard for Visible Emissions.
(see Streamlined Requirements discussion)

Monitoring

The monitoring and recordkeeping requirements in Condition 34 of the NSR permit have been modified to meet Part 70 requirements.

The emission limits for this boiler were established using relevant AP-42 emission factors for such a unit. The hourly emission limits from No. 2 oil and natural gas combustion were established based on the maximum rated capacity of the unit, insuring that the likelihood of exceedance is very small as long as the unit is maintained and operated properly. Annual emission limits were established based on the annual fuel throughput limits. Compliance with these emission limits will be demonstrated through compliance with the fuel throughput limits.

The Title V permit requires proper operation of the boiler to comply with the particulate matter and the visible emission requirements for the Superior oil-fired boiler. Since the unit operates by combustion of pipeline quality natural gas and distillate oil, no additional monitoring is required to show compliance with the opacity limit of 10%.

Compliance with the sulfur dioxide emissions will be determined based on the sulfur content of the distillate oil. Emission limits are based on the maximum possible emissions from oil containing 0.5% sulfur.

Recordkeeping

The minor NSR permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include annual fuel consumption, written operating procedures for the boiler, a maintenance schedule, fuel supplier certifications, and operating data that can be used to determine emissions. These requirements are incorporated in the Title V permit. The company will also keep operator training records and records of emissions estimates.

Testing

The Title V permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The Title V permit requires the company to submit fuel quality reports on a semiannual basis as required by 40 CFR 60.48(c). When the Title V permit was renewed in 2006, the company obtained authorization to submit Title V, MACT, and state-required semiannual reports on March 1 (covering calendar months July – December) and September 1 (covering calendar months January – June) of each year. This was clarified in the permit.

Streamlined Requirements

9 VAC 5-50-80, Standard for Visible Emissions, requires that visible emissions from sources constructed after 1972 not exceed 20% opacity. Since the Minor NSR permit requires a more stringent opacity limit of 10%, the requirement may be streamlined.

9 VAC 5-50-10 D states that the standards contained in 9 VAC 5 Chapter 40 apply to new sources if their provisions are more stringent than the standards in 9 VAC 5 Chapter 50, 9 VAC 5 Chapter 80, or any permit issued pursuant to 9 VAC 5 Chapter 80. Since 9 VAC 5 Chapter 40 contains emission standards for particulate matter and sulfur dioxide from boilers, we must determine which standards are more restrictive. If the standards in 9 VAC 5 Chapter 40 are more restrictive than the established permitted emission limits, then they must be included in the Title V permit. Otherwise, they may be streamlined.

9 VAC 5-40-900, Standard for Particulate Matter

Condition 29 of the NSR permit limits particulate matter emissions from this unit to 0.4 lb/hr. 9 VAC 5-40-900 B, Standard for Particulate Matter, requires a particulate matter limit determined by

$$E = 1.0906 H^{-0.2594} \quad \text{where } E \text{ is particulate emissions in lb/MMBtu and} \\ H \text{ is heat rating of the unit (17.8 MMBtu/hr).}$$

The resulting allowable particulate matter emission rate is,

$$E = 1.0906(17.8)^{-0.2594} \text{ lb/MMBtu} = 0.52 \text{ lb/MMBtu} \\ (0.52 \text{ lb/MMBtu})(17.8 \text{ MMBtu/hr}) = 9.3 \text{ lb/hr}$$

While the two figures are not expressed in common terms, the argument may be made that they are comparable. The lb/MMBtu expression represents an instantaneous quantity, but is practically verified by measurement over the course of a longer time frame, usually one hour. As can be seen from the above calculation, the Chapter 40 standard would allow emissions to exceed the hourly emission limits (by over twenty times). The Chapter 40 standard is considered much less restrictive and therefore inapplicable to this unit. This standard may be streamlined by the more stringent particulate matter emission limitation.

9 VAC 5-40-930, Standard for Sulfur Dioxide

9 VAC 5-40-930 limits sulfur dioxide emissions from boilers according to the formula

$$S = 2.64 K \quad \text{where, } S \text{ is lb/hr of SO}_2, \text{ and} \\ K \text{ is the heat capacity of the unit (17.8 MMBtu/hr).}$$

$$(2.64)(17.8) = 47.0 \text{ lb/hr SO}_2$$

Condition 29 of the NSR permit limits the sulfur emissions to 9.3 pounds per hour. The requirements of 9 VAC 5-40-930 are therefore less restrictive than current permit limitations, and streamlining of this requirement is appropriate.

EMISSION UNIT APPLICABLE REQUIREMENTS - Woodworking Operations (W1)

Limitations

The woodworking operations have state BACT requirements from Conditions 5, 6, 12, 13, 25, 31, 34, and 39 of a minor NSR permit issued on October 6, 2008 (as amended January 4, 2011). The requirements are summarized as follows:

Condition 5 requires that equipment processing green lumber be connected to a cyclone with closed loop transfer for controlling particulate matter emissions.

Condition 6 requires that particulate matter emissions from the dry wood processing equipment be controlled by baghouses.

Condition 12 requires that testing and monitoring ports be provided when requested.

Condition 13 limits the rough lumber throughput to 7,680 board-feet/hr and 32,000,000 board-feet/yr.

Condition 25 limits visible emissions from wood processing to 5% opacity.

Condition 31 limits particulate matter and PM10 emissions from woodworking equipment to 0.01 gr/dscf and 3.0 T/yr.

Condition 34 requires the company to keep records of wood throughput.

Condition 39 requires the company to have written operating procedures for process and air pollution control equipment, as well as records of operator training.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-50-80, Standard for Visible Emissions, requires 20% opacity
(see Streamlined Requirements discussion below)

9 VAC 5-50-90, Standard for Fugitive Dust, requires that reasonable means be used to reduce fugitive dust

Monitoring

The monitoring and recordkeeping requirements in Condition 34 of the NSR permit have been modified to meet Part 70 requirements.

If visible emissions are seen from a woodworking exhaust stack, it is reasonable to assume that there is a problem with one of the control devices. The woodworking equipment in operation is required to meet a particulate matter emission limitation of 0.01 gr/dscf. As long as the particulate emissions are vented through a properly operating control device, the standard is easily attained. If visible emissions are observed from the fabric filter exhausts, there is high probability that a maintenance problem exists. Baghouse exhausts are subject to Compliance Assurance Monitoring requirements since pre-controlled emissions of particulate matter are potentially greater than the major source threshold. These requirements are discussed below.

In accordance with the fugitive dust requirements, the company is required to cover all conveyors that are used for the collection and transfer of collected sawdust and shavings.

Compliance Assurance Monitoring (CAM)

At the time of the 2006 Title V permit renewal, the company submitted a CAM plan for evaluating six fabric filters used to control woodworking emissions. An additional baghouse will now also be subject to these provisions. The company must conduct daily visible emissions checks of each baghouse exhaust. Since the closed loop cyclone has no direct exhaust to the atmosphere, the company is not required to monitor it.

The company must check each baghouse exhaust daily for the presence of visible emissions. If visible emissions are present, corrective action must be taken such that no visible emissions occur. The presence of visible emissions will document an excursion. Excursions will be identified in the semi-annual monitoring report (more than six excursions semiannually will require the company to develop and implement a quality improvement plan). In addition, an annual internal inspection of each fabric filter and cyclone is required to ensure structural integrity. No pressure drop monitoring requirements are specified due to the varying ranges of particulate matter size and loading, as well as differences in the operating characteristics of each baghouse. Establishing a "normal" operating range in pressure drop for these baghouses is made difficult by wide variation in wood waste characteristics.

Recordkeeping

The minor NSR permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include monthly and annual lumber throughput and weekly observations and annual inspection results. These requirements are incorporated in the Title V permit.

Testing

The Title V permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

Monitoring excursions as described above will be included in the semi-annual monitoring report required in the General Conditions of this permit.

Streamlined Requirements

9 VAC 5-50-80, Standard for Visible Emissions, requires 20% opacity for sources of visible emissions. However, the NSR permit requires that visible emissions from woodworking processes meet 5% opacity. Since the permit requirements are more stringent than those of 9 VAC 5-50-80, streamlining is appropriate. The Title V permit contains 5% opacity requirements.

EMISSION UNIT APPLICABLE REQUIREMENTS - Wood Drying Operations (D1 & D2)

Limitations

The Wood drying operations have state BACT requirements from Conditions 12, 13, 32, 34 and 39 of the minor NSR permit issued on October 6, 2008 (as amended January 4, 2011). The requirements are summarized as follows:

Condition 12 requires that testing and monitoring ports be provided when requested.

Condition 13 limits rough lumber throughput to 7,680 bd-ft/hr and 32,000,000 bd-ft/yr.

Condition 32 limits the annual VOC emissions from kilns to 5.4 T/yr.

Condition 34 requires the company to keep records of wood throughput.

Condition 39 requires the company to have written operating procedures for process and air pollution control equipment, as well as records of operator training.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-60-100; Subpart DDDD – National Emissions Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products (40 CFR 63.2230-2292) applies to lumber dry kilns at major sources of HAP emissions. However, only initial notification requirements are known to apply. These requirements have been fulfilled.

Monitoring

The monitoring and recordkeeping requirements in Condition 34 of the NSR permit have been modified to meet Part 70 requirements.

This operation is not a source of visible emissions and is therefore not subject to opacity requirements on stack exhausts. Since no particulate emissions are expected from this operation, no opacity observations are required to show compliance.

Monthly and annual lumber throughput must be monitored. VOC emissions will be calculated using approved emission factors for hardwood and softwood.

Recordkeeping

The minor NSR permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include monthly and annual lumber throughput, VOC emissions, and the ratio of hardwood to softwood. These requirements are incorporated in the Title V permit.

Testing

The Title V permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

There are no specific reporting requirements for this operation.

Streamlined Requirements

No streamlining is proposed for this operation.

EMISSION UNIT APPLICABLE REQUIREMENTS - Finishing Operations (F1)

Limitations

The finishing operations have several applicable requirements from Conditions 2, 4, 7, 8, 9, 10, 11, 12, 16, 21, 22, 26, 27, 28, 34, 35, 36, and 39 of the minor NSR permit issued on October 6, 2008 (as amended January 4, 2011). The requirements are summarized as follows:

Condition 2 requires that particulate matter emissions from the spray booths be controlled by dry filters.

Condition 4 requires that particulate matter emissions from an automatic door wiping station be controlled by a dry filter system.

Condition 7 requires that VOC emissions from the two topcoat spray booths (including flash and drying areas) and the two sealer spray booths be controlled by a regenerative thermal oxidizer (RTO).

Condition 8 requires that VOC control efficiency of the RTO meet 95%.

Condition 9 requires that VOC capture efficiency of the RTO meet 95%.

Condition 10 requires that the combustion temperature of the RTO be maintained within 50°F of that demonstrated by the most recent successful stack test.

Condition 11 requires that the RTO be equipped with a continuous temperature measuring device.

Condition 12 requires that testing and monitoring ports be provided when requested.

Condition 16 limits fuel for the RTO to natural gas.

Condition 21 limits visible emissions from the RTO exhaust to 5% opacity.

Condition 22 limits visible emissions from spray booth, flash area, automatic wiping station, and drying oven exhausts to 5% opacity.

Condition 26 requires that total VOC throughput to finishing operations be limited by the following formula,

$$X + Y(1 - \text{OCE}_{\text{Topcoat}}/100) + Z(1 - \text{OCE}_{\text{Sealer}}/100) \leq 455.2 \text{ tons/yr}$$

where:

X = VOC throughput to uncontrolled operations

Y = VOC throughput to two controlled topcoat spray booths

OCE_{Topcoat} = overall VOC control efficiency of two topcoat booths (capture & control ≥ 90%)

Z = VOC throughput to two controlled sealer spray booths

OCE_{Sealer} = overall VOC control efficiency of two sealer booths (capture & control ≥ 60%)

Condition 27 limits emissions from the RTO to the quantities below:

POLLUTANT	Lb/hr	T/yr
Carbon Monoxide	0.4	1.3
NO ₂	0.3	1.5

Condition 28 limits pollutant emissions from finishing operations to the quantities in the table below:

POLLUTANT	Lb/hr	T/yr
Particulate Matter	0.5	0.6
PM10	0.5	0.6
Volatile Organic Compounds	374.2	455.2

Condition 34 requires the company to maintain records of coating usage.

Condition 35 requires the company to conduct performance tests to show compliance with RTO capture and control efficiencies for VOC.

Condition 36 requires the company to conduct initial visible emissions tests on the RTO exhaust during the initial performance test.

Condition 39 requires the company to have written operating procedures for process and air pollution control equipment, as well as records of operator training.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-60-100, Subpart JJ National Emission Standards for Hazardous Air Pollutants: Wood Furniture Manufacturing Operations - 40 CFR 63.800 - 819.

9 VAC 5-50-80 and 290, New Source Standard for Visible Emissions.
(see Streamlining discussion)

Monitoring

The monitoring and recordkeeping requirements in Condition 34 of the NSR permit have been modified to meet Part 70 requirements.

The Title V permit requires use of dry filters on spray booths to demonstrate compliance with the visible emission requirements. A properly operating dry filter can comply with the 5% opacity limit. The permittee will be required to perform weekly visible emission observations of each spray booth exhaust serving the finishing operation and the RTO exhaust. If visible emissions are present, timely corrective action must be taken such that no visible emissions are present, or a six-minute visible emission evaluation (VEE) must be performed according to 40 CFR 60, Appendix A, Method 9. If during the six-minute period, any violations of the 5% opacity standard are noted, a 60-minute VEE is required to demonstrate compliance with the standard. Weekly observations will satisfy the periodic monitoring requirement for the visible emission limitation. Frequent checks for visible emissions will indicate malfunctions of the control equipment. As long as the control equipment is operating properly, there is little likelihood of violating the visible emission limitation.

The Title V permit includes a requirement to monitor and record the hourly, monthly, and annual emissions of particulate matter and VOC, based on material balance, and the number of hours per month of operation. The VOC content of each coating material will be determined using appropriate EPA test methods (Method 24). Material safety data sheets (MSDS) or certified product data sheets (CPDS) may be relied upon provided the information contained therein is determined using approved EPA test methods. The company is also responsible for the monitoring requirements of the Wood Furniture MACT (see Facility-wide requirements).

Compliance Assurance Monitoring (CAM)

At the time of the 2006 Title V permit renewal, the company submitted a CAM plan for evaluating the performance of the RTO serving four spray booths. The CAM plan requires the company to continuously monitor the temperature of the RTO combustion chamber. The temperature must be maintained at no more than 50°F below the temperature established in the most recent stack test that demonstrated compliance. Any temperature reading (3-hr avg.) that departs more than 50°F below the stack test temperature will constitute an excursion requiring

the company to take corrective action. Excursions will be reported in the semi-annual monitoring report (more than six excursions semiannually will require the company to develop and implement a quality improvement plan).

In addition, the company will conduct an annual inspection of the burner to verify proper operation of the device, and conduct emissions testing once each five-year period to confirm control and capture efficiencies of the system.

Recordkeeping

The minor NSR permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include the hourly, monthly and annual throughput of particulate matter and VOC. These requirements are incorporated in the Title V permit. Also, the company will record the results of the weekly emissions observations.

Records are also required for scheduled and non-scheduled maintenance on the air pollution control equipment and training of operators of the equipment to include names of trainees, date of training, and nature of training.

RTO temperature will be monitored continuously by strip chart recorder.

The weekly observations and recordkeeping required by the permit will satisfy the periodic monitoring requirement for the spray booths and the RTO. Recordkeeping requirements of the MACT are given in the Facility-wide requirements.

Testing

Testing of the VOC capture and control efficiencies of the RTO are required by the minor NSR permit during each five-year period. VOC capture will be tested using a negative pressure measurement method. VOC emission control will be determined using EPA Methods 25, 25A, or 25B. Visible emissions testing of the RTO exhausts using Method 9 is also required.

Reporting

Monitoring excursions as described above will be included in the semi-annual monitoring report required in the General Conditions of this permit.

Streamlined Requirements

9 VAC 5-50-80, Standard for Visible Emissions, requires 20% opacity for sources of visible emissions. However, the NSR permit requires that visible emissions from spray booth and RTO exhausts meet 5% opacity. Since the permit requirements are more stringent than those of 9 VAC 5-50-80, streamlining is appropriate. The Title V permit contains 5% opacity requirements.

FEDERAL REQUIREMENTS

Limitations

The permittee is subject to the 40 CFR 63 Subpart JJ, National Emission Standards for Wood Furniture Manufacturing Operations (Wood Furniture MACT). All applicable limitations from the Wood Furniture MACT have been included in the permit. The permittee is also subject to 40 CFR 63 Subpart A, General Provisions. Applicable limitations from the general provisions have also been included in the permit.

The boilers at the facility are affected sources according to 40 CFR Subpart DDDDD (§63.7490(a)), National Emissions Standards for Hazardous Air Pollutants: Industrial, Commercial, and Institutional Boilers and Process Heaters. After this rule was initially promulgated, it was vacated by federal court. A final rule was published on March 21, 2011, but the rule is currently subject to reconsideration. The company identified the requirement to submit an initial notification as an applicable requirement. Subsequently, on May 18, 2011, EPA delayed the effective date of the rule until after judicial review or reconsideration, whichever comes first. Therefore, the rule is considered a future applicable requirement.

Likewise, the kilns at the facility are considered affected sources according to 40 CFR Subpart DDDD (§63.2231(a)), National Emissions Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products. The only requirements that apply, however, involve the initial notification, which has already been submitted by the company. This MACT will also be cited as technically applicable.

On June 3, 2010, EPA published the Greenhouse Gas Tailoring Rule defining greenhouse gases (GHG) as pollutants subject to regulation under 40 CFR Part 70 requirements. After July 1, 2011, a stationary source having the potential to emit 100,000 tons per year of carbon dioxide equivalents is subject to regulation under Title V. The company provided GHG emissions estimates for 2009 showing that they are well below this threshold.

Monitoring

The Wood Furniture MACT contains requirements for continuous compliance, including monthly and/or daily recordkeeping depending on the method of compliance. These requirements have been incorporated in the permit. The Wood Furniture MACT contains adequate monitoring to meet the periodic monitoring requirements, so no additional monitoring has been incorporated into the Title V permit.

Recordkeeping

The Wood Furniture MACT contains requirements for recordkeeping that include maintaining certified product data sheets for each material used and all calculations used to demonstrate continuous compliance. No additional recordkeeping has been included in the Title V permit.

Testing

The permit does not require source tests. The Department and EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The Wood Furniture MACT requires that a source demonstrate continuous compliance and submit monitoring results semi-annually. The company previously obtained approval to submit all MACT, Title V, and state-required reports on the same dates and for the same reporting time periods. The semi-annual compliance and monitoring reports are due on March 1 and September 1, covering the periods January 1 to June 30 and July 1 to December 31, respectively.

Streamlined Requirements

The initial notification requirements associated with the Wood Furniture MACT have not been included in the permit because the source has already completed the notifications.

The permittee has opted not to use a control device to meet the MACT requirements. Therefore, all requirements regarding a control device have not been included in the permit.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-2003".

This general condition cites the sections that follow:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1790. Applicability, Permits For Major Stationary Sources and Modifications
Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications
Locating in Nonattainment Areas

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction

9 VAC 5-80-110. Permit Content

Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follows:

40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.

40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.

40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:
9 VAC 5-60-70. Designated Emissions Standards
9 VAC 5-80-110. Permit Content

FUTURE APPLICABLE REQUIREMENTS

The company did not identify any future applicable requirements in the application. As stated previously, boilers will be subject to MACT DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters - requirements after the applicable compliance date. No other future requirements are anticipated at this time.

INAPPLICABLE REQUIREMENTS

The company did not identify any requirements that do not apply.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation ¹ (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
AMS1	Gas-fired air makeup system rated at 8.25 MMBtu/hr heat input (plant ventilation)	9 VAC 5-80-720 A.2 & A.3		
AMS2	Gas-fired air makeup system rated at 19.25 MMBtu/hr heat input (plant ventilation)	9 VAC 5-80-720 A.2 & A.3		
PW1	Parts Washer	9 VAC 5-80-720 B	VOC	
STs	Storage Tanks	9 VAC 5-80-720 B	VOC	

Emission Unit No.	Emission Unit Description	Citation ¹ (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
G1	Wood Gluing	9 VAC 5-80-720 B	VOC	

¹The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The company did not submit a request to maintain any of the information confidential.

PUBLIC PARTICIPATION

The proposed permit was announced by public notice in the *Smyth County News* on April 30, 2011. The public comment period extended from May 1, 2011 to May 30, 2011. No comments were received from the public or the appropriate agencies of nearby affected states. The documents were submitted to EPA as draft/proposed for concurrent 45-day review. EPA's review period expired on June 14, 2011 with no comments being given. Having received no comments, the permit was put in final form and issued.

Run Date 11/01/2010 11:22:33 AM

Registration Number : 10830

County - Plant Id: 173-00071

Plant Name : MASCO-Merillat Corp Atkins Plant 12

POLLUTANT EMISSIONS REPORT (STACK/POINT) (TONS/YEAR)Pollutant Type: All Pollutants
Years: 2009 - 2009Parameter List

Inventory Year 2009

Stack #: 5

Point #:	22	PAH1	PM	PM 10	PM 2.5	TOLU	VOC	XYLS
1	0.088	0.023	0.023	0.023	0.023	0.043		4.520
2							114.330	
	0.088	0.023	0.023	0.023	0.023	0.043	114.330	4.520

Commonwealth of Virginia
Department of Environmental Quality

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POLLUTANT EMISSIONS REPORT (STACK/POINT) (TONS/YEAR)

Parameter List

Pollutant Type: All Pollutants
Years: 2009 - 2009

Inventory Year 2009

Stack #: 5

Point #: 22	EBENZ	ETGYL	FORM	GLYET	ISPBZ	MTBTN	MTETN	MTHOL
Segment #: 1	1.030	0.000	0.000	0.790	0.144	0.004	0.008	0.860
Segment #: 2	1.030	0.000	0.000	0.790	0.144	0.004	0.008	0.860

Run Date 11/01/2010 11:22:33 AM

Registration Number : 10830

County - Plant Id: 173-00071

Plant Name : MASCO-Merillat Corp Atkins Plant 12

POLLUTANT EMISSIONS REPORT (STACK/POINT) (TONS/YEAR)

Pollutant Type: All Pollutants
Years: 2009-2009

Parameter List

Inventory Year 2009

Stack #: 1

Point #:	PM 2.5	SO2	TCA	VOC
1	3.681	0.599	0.001	0.411
2		0.000		0.000
	3.681	0.599	0.001	0.411

Stack #: 2

Point #:	CO	NO2	PM	PM 10	PM 2.5	SO2	VOC
Segment #: 1	0.000	0.000	0.000	0.000		0.000	0.000
Segment #: 2	1.054	1.255	0.095	0.095	0.095	0.008	0.069
	1.054	1.255	0.095	0.095	0.095	0.008	0.069

Stack #: 3

Point #:	CO	NO2	PM	PM 10	PM 2.5	SO2	VOC
Segment #: 1	0.353	0.420	0.032	0.032	0.032	0.003	0.023
	0.353	0.420	0.032	0.032	0.032	0.003	0.023

Stack #: 4

Point #:	PM	PM 10
Segment #: 1	0.435	0.435
	0.435	0.435

Point #:	VOC
Segment #: 1	1.135
	1.135

Commonwealth of Virginia
Department of Environmental Quality

Run Date 11/01/2010 11:22:33 AM

Registration Number : 10830

County - Plant Id: 173-00071

Plant Name : MASCO-Merillat Corp Atkins Plant 12

POLLUTANT EMISSIONS REPORT (STACK/POINT) (TONS/YEAR)

Parameter List

Pollutant Type: All Pollutants
Years: 2009-2009

Inventory Year 2009

Stack #: 1

Point #: 1	CO	HCL	MC	NO2	P-PT	PERC	PM	PM 10
Segment #: 1	14.382	0.520	0.008	11.745	0.001	0.001	4.093	3.681
Segment #: 2	0.000	0.000		0.000			0.000	0.000
	14.382	0.520	0.008	11.745	0.001	0.001	4.093	3.681